

AMENDMENTS TO THE SPECIFICATION:

Please amend the specification on Page 1, line 17 through Page 2, line 15 (of the PCT application as published) as follows:

It is a purpose of the invention to provide an architecture for a multirate filter wherein the symmetry of its components is recovered. For that purpose the multirate filter according to the invention has a construction as ~~defined in claim 1~~ described herein. It has been recognized by the inventors that a symmetric multirate may be constructed from an input unit, a filter unit and an output unit, wherein the filter unit has symmetric modules derived from the polyphase components of the multirate filter provided that the modules are provided in pairs having transfer functions $H_0(z)$ and $H_1(z)$, which are derived from a basic transfer function $H_B(z)$ as follows. The first one $H_0(z)$ of the transfer functions is based on the sum of the basic transfer function $H_B(z)$ and its mirrored version:

$$H_0(z) = c_0(H_B(z) + M_{\alpha,\psi} H_B(z)), \text{ and}$$

the second one $H_1(z)$ is based on the difference of the basic transfer function $H_B(z)$ and its mirrored version:

$$H_1(z) = c_1(H_B(z) - M_{\alpha,\psi} H_B(z)).$$

The mirror operation $M_{\alpha,\psi}$ on the basic transfer function $H_B(z)$ is defined as:

$$M_{\alpha,\psi} H_B(z) = \alpha z^{-2\psi} H_B(z^{-1}), \text{ and wherein}$$

$$H_B(z) = \sum h_b[m] z^{-m}, H_B(z) \text{ being the } z\text{-transform of } h_b[m]$$

Therein the value 2ψ is an integer number, selected from Z , and

the value α is an element from the set C of complex numbers.

More in particular it has been discovered by the inventors that the asymmetric components of the polyphase filter can be redesigned into ~~one of the~~ different embodiments ~~described in claims 2 and 5,~~ or a combination thereof.

In ~~the embodiment of claim 2~~ one embodiment, the basic transfer function $H_B(z)$ is a polyphase component of the multirate filter. ~~The embodiment of claim 2 has two sub-embodiments as defined in claim 3 and claim 4. In the subembodiment of claim 3~~ In another embodiment, the input unit comprises a combination unit ~~as defined in claim 1, and claim 4~~ and in another embodiment, the output unit comprises such a combination unit. In ~~the embodiment of claim 5~~ yet another embodiment, the basic transfer function $H_B(z)$ is a linear function of two polyphase components is of the multirate filter.